

REMARKS

Claim 1 has been amended in the light of the examiner's comment on the term "pure" to make it clear that the product has a high degree of purity, even though not necessarily 100% pure.

A key issue in the final rejection is the examiner's conclusion that the teaching of Bastnet that imperatorin is soluble in chloroform makes it obvious to substitute chloroform or other halogenated solvents for benzene in the process described by Saha. It is respectfully submitted that this conclusion is in error. As explained in the present application and in response to the previous action, furanocoumarins such as imperatorin are often found together with other compounds from which their separation is difficult. Use of polar solvents for extraction results in extracts having a high amount of color and fatty material that must be removed to produce a pure product. Halogenated solvents such as chloroform are more polar than benzene. Benzene has a dielectric constant of 2.3. Chloroform has a dielectric constant of 4.8. When one is seeking to move away from polar solvents, one would have no reason to move towards a more polar solvent. When looking for suitable solvents to use in an extraction process, the ability of the material one wishes to obtain to dissolve in the solvent is only one of a number of factors to consider. Others include the solubility of other materials in the solvent (one is after all seeking to effect a separation) and the relative density of the extracting solvent and the medium from which extraction is desired. As noted above, the art recognized a need to avoid polar solvents to secure good separation. On the question of density, benzene is less dense than water (0.879 g/ml) whereas chloroform is denser than water (1.498). This presents another reason why one skilled in the art would not simply substitute chloroform for benzene in Saha's process.

In considering 35 USC 10, the Supreme Court has pointed out that:

[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR International Co. v. Teleflex, Inc.* 550 U.S. 398 82 USPQ2d 1385 (2007) .

The MPEP points out in paragraph 2143.02

The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)

In the present case, it is submitted that there is neither a rational underpinning for the examiner's conclusion that one can replace benzene with chloroform in the Saha process nor is there any reasonable expectation of success if one were to do so.

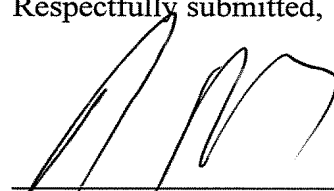
As noted previously, the present invention teaches efficient and economical extraction of imperatorin with high purity (85%) and 90% (Example 3) and better yield of product as compared to prior art. Use of the halogenated solvent in the present invention either directly or to partition an alcoholic extract avoids the problems associated with use of benzene as discussed in the present application and also improvement over the use of polar solvents as discussed previously. The art does

not predict this.

It is therefore submitted that the requirements of 35 USC 103 have been met.

In view of the foregoing, it is submitted that this application is now in order for allowance and an early action to this end is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'John Richards', is written over a horizontal line.

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